

## REMARKS

This application has been carefully reviewed in light of the Office Action dated September 8, 2003. Claims 1 to 44 are in the application, of which Claims 1, 19, 38, 40, 42 and 44 are the independent claims. Claims 6, 15, 16, 18, 30, 32 and 38 to 41 have been withdrawn from consideration pursuant to an election of species requirement. Reconsideration and further examination are respectfully requested.

Claims 1 to 3, 5, 8, 9, 11, 17, 19, 20, 22 and 44 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,434,939 (Matsuda). Claims 4, 7 and 21 were rejected under 35 U.S.C. § 103(a) over Matsuda in view of U.S. Patent No. 6,568,863 (Murata). Claim 13 was rejected under 35 U.S.C. §103(a) over Matsuda in view of U.S. Patent No. 5,946,438 (Minot). Claims 23 to 29, 33 to 36, 42 and 43 were rejected under 35 U.S.C. §103(a) over Matsuda in view of U.S. Patent No. 6,527,455 (Jian). Claims 10, 12 and 37 were rejected under 35 U.S.C. §103(a) over Matsuda in view of U.S. Patent No. 5,790,730 (Kravitz). Claim 14 was rejected under 35 U.S.C. §103(a) over Matsuda and Kravitz, in view of Minot. Claim 31 was rejected under 35 U.S.C. §103(a) over Matsuda and Jian, in view of U.S. Patent No. 6,332,721 (Inokuchi). The rejections are respectfully traversed.

The present invention as recited by Claims 1, 19 and 44 concerns a surface optical device apparatus (Claim 1) or an optical apparatus (Claims 19 and 44) which includes a surface optical device and a layer formed of a radiation-curable or electron-beam-curable material. The surface optical device is capable of emitting or receiving light through a surface of the surface optical device. A guide hole for inserting an end portion of a light-transmission member therein is formed in the layer at a position corresponding to the surface of the surface optical device such that the surface optical device can be optically coupled to the light-transmission member inserted in the guide hole. The guide hole is formed in the layer by

performing a patterning on the layer using photolithography. According to Claim 19, the optical apparatus includes a substrate having the surface optical device arranged thereon, and a light transmission member optically coupled to the surface optical device.

The present invention, as recited by Claim 42, concerns a method of fabricating a plurality of optical apparatuses in a collective manner, the method including the following steps: (a) forming functional layers of surface optical devices on a growth substrate; (b) forming a plurality of sets of electric wiring patterns on a plurality of respective areas of an implement substrate; (c) bonding at least a surface optical device, which is cut from the growth substrate with the functional layers of the surface optical devices, to each respective area of the implement substrate; (d) forming a layer of a radiation-curable or electron-beam-curable material with a guide hole on each surface optical device using photolithography; (e) implementing an electronic device on each respective area of the implement substrate in a flip-chip manner; (f) dicing the implement substrate such that the respective areas of the implement substrate are separated from each other; and (g) inserting a light-transmission member into each guide hole such that the surface optical device is optically coupled to the light-transmission member inserted in the guide hole.

Thus, according to one feature of the invention as recited by the claims under consideration, the guide hole into which the light-transmission member is inserted is formed in a layer made of a radiation-curable or electron-beam-curable material.

Matsuda is not seen to disclose at least the foregoing feature.

The portion of Matsuda relied upon by the Office Action for this feature (col. 4, lines 11 and 12) merely describes a curable adhesive (113) used to fix an optical fiber (112) after the optical fiber (112) has been inserted into a guiding hole (111). Nowhere is Matsuda seen to teach or suggest that his guiding holes (111, 216, 306) are formed in a layer made of a

radiation-curable or electron-beam-curable material. It is Applicants' understanding that Matsuda's guiding holes are formed by etching, not by curing. See, for example, col. 5, lines 34 to 36 of Matsuda.

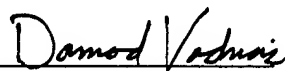
Murata, Minot, Jian, Kravitz and Inokuchi are not seen to add anything that would remedy the deficiencies of Matsuda. Applicants therefore conclude that the applied documents do not teach or suggest the claimed invention either singly or in the combinations proposed by the Office Action, and it respectfully requested that the Section 103 rejections be withdrawn.

Claim 44 is believed to be generic, since it includes no material element additional to those recited in the species claims, and comprehends within its confines the organization covered in each of the species. Accordingly, once Claim 44 has received an indication of allowability, examination of non-elected Claims 6, 15, 16, 18, 30, 32 and 38 to 41 is respectfully requested. See MPEP § 806.04(d).

No other matters being raised, the entire application is believed to be in condition for allowance, and such action is courteously solicited.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

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